FACT SHEET

G-Logger™ Acceleration Acquisition System

Silicon Designs, Inc., of Issaquah, Washington is commercializing the G-Logger™ Acceleration Acquisition System developed under a Small Business Innovation Research (SBIR) contract with NASA at Kennedy Space Center. The G-Logger is a portable, tri-axial data acquisition system for acquiring, storing, and analyzing shock, vibration, and temperature data. The device is self-contained and sealed from the weather, and can operate unattended for up to 3 weeks on two D-cell batteries.

Company President John Cole said that Silicon Designs is marketing the innovation as the Model 3310 G-Logger™. The company sees applications in many industrial settings, including the automotive, shipping, aerospace, and rotating machinery operations. The G-Logger can be used as a shipping and handling monitor for commercial shippers where it records tri-axial acceleration, vibration, and shock conditions experienced by payloads. Since its response capability includes DC, it can also measure payload orientation. For automotive applications, the G-Logger can be used for suspension testing, as a crash event detector, or for racecar instrumentation. For industrial applications it should prove useful as a vibration monitor for rotating machinery. For aircraft applications, the G-logger can serve as a flight vibration monitor.

The system is easily programmed through a serial link to a PC or notebook computer running Windows 95/98. When activated, the G-Logger stores up to 8 megabytes of acceleration and temperature data in non-volatile memory. Preprocessing the data into the parameter of interest before being stored makes efficient use of the memory. The unit can store sampled, peak, or RMS acceleration or velocity at a rate of 1 to 4,000 samples per second. After data collection, the data is subsequently downloaded to a PC for display and analysis.

NASA's need for this innovation came from the KSC Payloads Operations group. Space Shuttle payloads are critical pieces of equipment that are sensitive to movement. The ability to track the vibration and movement of the payload would greatly influence

the ability to detect damage due to movement. Numerous payloads have to be transported from assembly and test facilities to the Shuttle launch pads and other assembly buildings. NASA named this innovation the Smart Tri-Axial Acceleration Data Acquisition and Storage System. The objective was to build a tri-axial acceleration data acquisition system (DAS) for payload monitoring that can continually measure and record three orthogonal acceleration components for a period of up to 4.6 days.

The G-Logger is well suited for a wide range of applications, including measuring transportation shock and vibration, instrumenting motor vehicles, aircraft and missiles, and unattended testing of machinery and equipment. The unit is priced at $4,995 each in quantities of 1-5. For more information, visit the company's Website at: www.silicondesigns.com.

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